

## Free Fall Quiz PDF

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**What is the initial velocity of an object that is simply dropped from a height?**

- 0 m/s
- 5 m/s
- 9.81 m/s
- 15 m/s

**What is the acceleration due to gravity on Earth?**

- 7.81 m/s<sup>2</sup>
- 9.81 m/s<sup>2</sup>
- 10.81 m/s<sup>2</sup>
- 11.81 m/s<sup>2</sup>

**Calculate the time it takes for an object to fall from a height of 20 meters on Earth.**

**Discuss the implications of free fall principles in designing safety equipment like parachutes.**

**Describe how air resistance affects the motion of a free-falling object.**

**Which scenarios describe a true free fall? (Select all that apply)**

- A skydiver before opening the parachute
- A satellite orbitin Earth
- A ball thrown upwards
- A stone dropped in a vacuum

**Explain why objects of different masses fall at the same rate in a vacuum.**

**In the absence of air resistance, which of the following is true for two objects of different masses dropped from the same height? (Select all that apply)**

- They will hit the ground at the same time.
- The heavier object will hit the ground first.
- They will have the same acceleration.

The lighter object will hit the ground first.

**What happens to the velocity of an object in free fall as it continues to fall?**

- It decreases
- It remains constant
- It increases
- It stops

**What is the primary force acting on an object in free fall?**

- Friction
- Tension
- Gravity
- Air resistance

**Which scientist is known for demonstrating that objects of different masses fall at the same rate?**

- Isaac Newton
- Albert Einstein
- Galileo Galilei
- Nikola Tesla

**Which factors can affect the motion of a free-falling object in the real world? (Select all that apply)**

- Air resistance
- Mass of the object
- Height from which it is dropped
- Shape of the object

**In a vacuum, which of the following objects will hit the ground first when dropped from the same height?**

- A feather
- A hammer
- Both at the same time
- Neither will hit the ground

**What is the term for the maximum speed reached by a falling object when air resistance equals gravitational force?**

- Free fall speed
- Constant velocity
- Terminal velocity
- Maximum velocity

**Explain the concept of terminal velocity and how it is achieved.**

**Which of the following best describes free fall?**

- Motion with constant speed
- Motion under the influence of gravity alone
- Motion with air resistance
- Motion with constant acceleration

**What are the characteristics of terminal velocity? (Select all that apply)**

- Constant speed
- No net force acting on the object
- Acceleration continues to increase
- Air resistance equals gravitational force

**How would the free fall experience differ on the Moon compared to Earth?**

**Which of the following statements about free fall are true? (Select all that apply)**

- Objects in free fall experience air resistance.
- The acceleration due to gravity is constant.
- Mass affects the rate of free fall in a vacuum.
- Free fall only occurs in a vacuum.

**Which of the following equations are used to describe the motion of an object in free fall? (Select all that apply)**

- $v = u + gt$
- $s = ut + \frac{1}{2}gt^2$
- $F = ma$
- $v^2 = u^2 + 2gs$